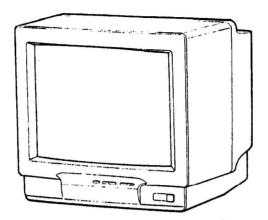
KV-1415AS **RM-827B**

SERVICE MANUAL

Australian Model

Chassis No. SCC-F35A-A



G 3 E CHASSIS

MODELS	OF	THE	SAME	SERIES
KV-1415AS	;			
KV-1415GE	:			

SPECIFICATIONS

Power requirements Power consumption Color system

110-240 V AC, 50/60 Hz Indicated on the rear of the TV PAL, PAL60, NTSC4.43,

Television system

Channel coverage

Low VHF band

0-5, 5A 1-3

High VHF band

6-11 4-10

UHF

28-69

CATV

B/G

3 W

S01-S03, S1-S20

Audio output

Inputs

Antenna: 75 ohms Earphone jack: mini jack

Output Picture tube

Approx. 37 cm (14 inches)

Dimensions

Approx. 364 × 344 × 405 mm (w/h/d)

Weight

Approx. 11 kg

Design and specifications are subject to change without notice.



TRINITRON®COLOR TV SONY

TABLE OF CONTENTS

Section	<u>Title</u>	<u>Page</u>	Section	<u>Title</u>	Page
1. GEN	IERAL		4. CIRC	CUIT ADJUSTMENT	
1-1. 1-2.	Antenna Connection	4	4-1.	A Board Adjustments	14
1-3.	Preset the Channels Automatically		5. DIAC	GRAMS	
1-4. 1-5. 1-6. 1-7.	Watching the TV Watching the Video Input Adjustment Additional Presetting	·· 5 ·· 6	5-1. 5-2. (1) (2)	Circuit Boards Location	oards 18
2. DISA	ASSEMBLY		5-3.	Semiconductors · · · · · · · · · · · · · · · · · · ·	
2-1. 2-2.	Rear Cover Removal	U	6. EXP	LODED VIEW	27
2-3.	Picture Tube Removal · · · · · · · · · · · · · · · · · · ·	9	7. ELE	CTRICAL PARTS LIST	28
3. SET	-UP ADJUSTMENTS				•
3-1.	Beam Landing				
3-2.	Convergence ·····				
3-3.	Focus ·····	13			
3-4.	Screen (G2) and White Balance	13			

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

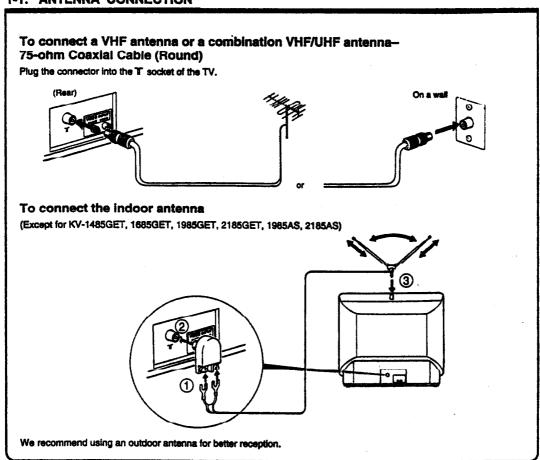
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK & ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

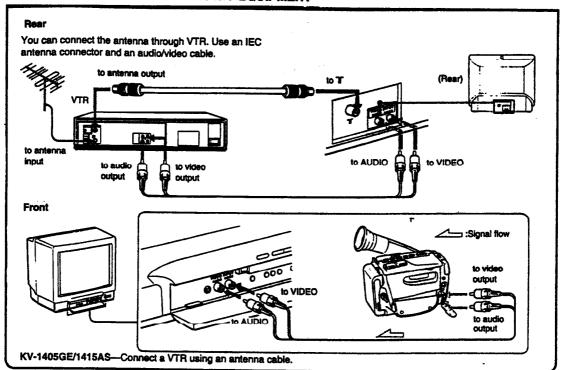
1-1. ANTENNA CONNECTION



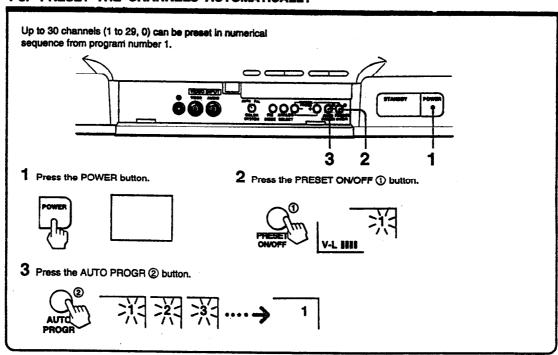
For KV-1405GE or KV-1415AS

KV-1405GE KV-1416AS	These models do not have audio/video jacks. Use an antenna cable to connect a VTR. (Page 3)
KV-1405GE	This model is not supplied with a Remote Commander. Use the buttons on the TV for operation. (Pages 4, 5, 6)

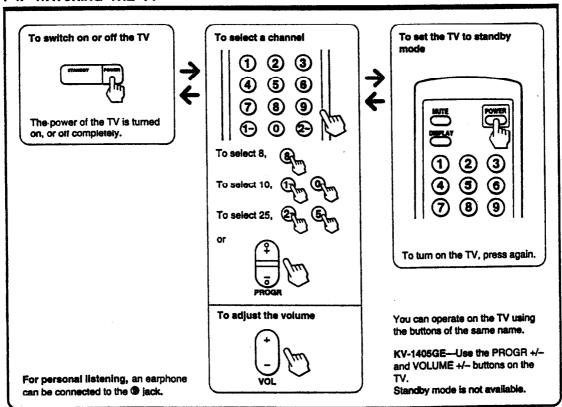
1-2. CONNECTING VTR OR OTHER EQUIPMENT



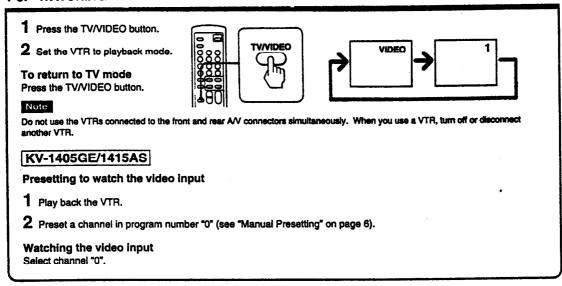
1-3. PRESET THE CHANNELS AUTOMATICALLY



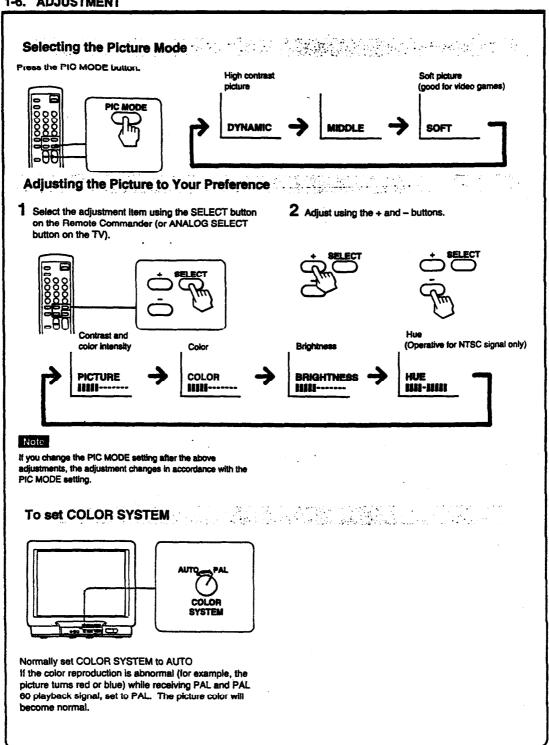
1-4. WATCHING THE TV

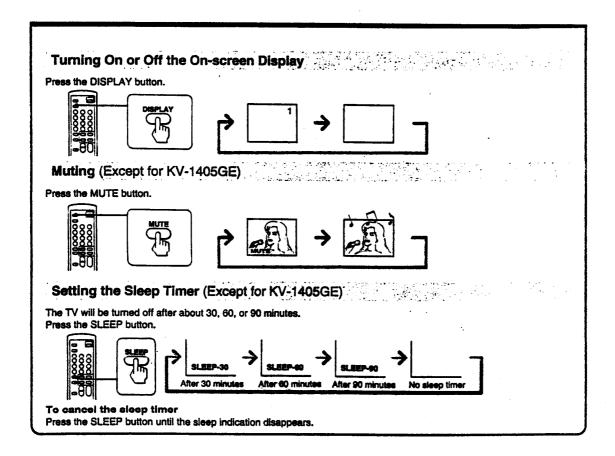


1-5. WATCHING THE VIDEO INPUT



1-6. ADJUSTMENT





1-7. ADDITIONAL PRESETTING

Manual Presetting

To change the program number for a channel, or to receive a channel of weak signal, preset the channel manually.

Example: To preset a channel in program number 8

- 1 Press the PRESET ON/OFF button.
- 2 Press the PROGR +/- button until "8" appears.
- 3 Press the MANUAL PROGR +/- buttons until the channel you want appears.
- 4 Press the PRESET ON/OFF button.

To preset other channels, repeat steps 1 through 4.

Skipping Program Positions

You can skip the unused or undesired program position when you are selecting a program using the PROGR +/-buttons.

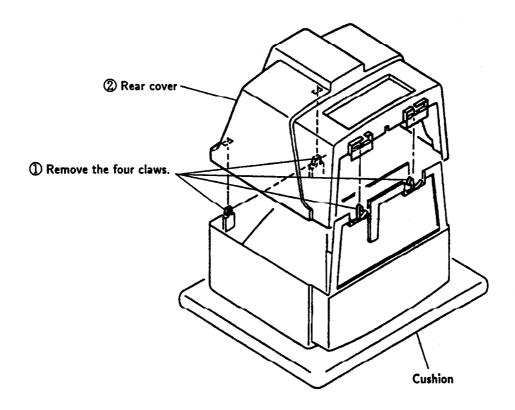
Example: To skip the program position 8

- 1 Press the PROGR +/- buttons until "8" appears.
- 2 Press the PRESET ON/OFF button.
- 3 Press the PIC MODE button.
 Repeat steps 1 through 3 to skip other program position.
- 4 Press the PRESET ON/OFF button.

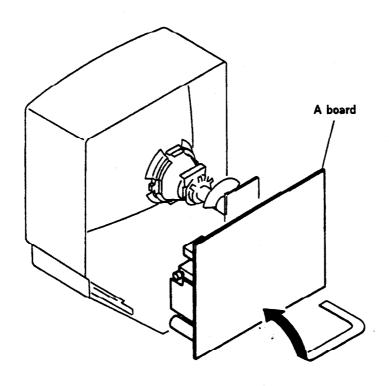
To restore the skipped program position Preset the station manually as described in "Manual Presetting", or preset automatically again.

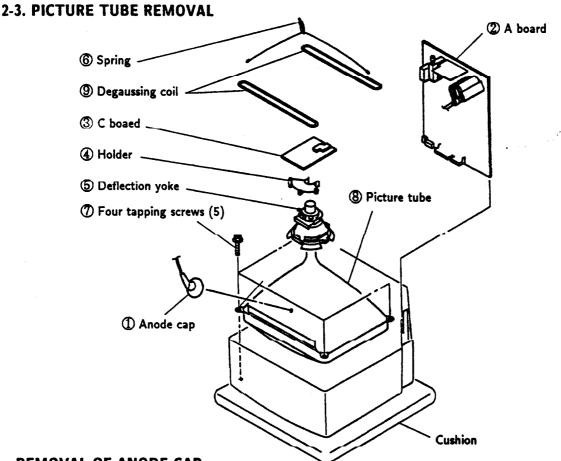
SECTION 2 DISASSEMBLY

2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION

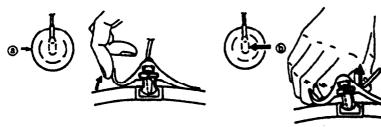




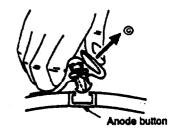
· REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

• REMOVING PROCEDURES



① Turn up one side of the rubber cap in ② Using a thumb pull up the rubber cap the direction indicated by the arrow ③.



. . . .

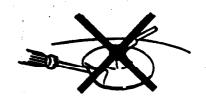
(3) When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow (3).

• HOW TO HANDLE AN ANODE-CAP

- Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!
 - A material fitting called as shatter-hook terminal is built in the rubber.
- Don't turn the foot of rubber over hardly!

 The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3

SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

The controls and switch should be set as follows unless

PICTURE control normal BRIGHTNESS control normal

Perform the adjustments in order as follows:

- 1. Beam Landing
- 2. Convergence
- 3. Focus
- 4. Screen (G 2) and White Balance

Note: Test Equipment Required.

- 1. Color bar Pattern Generator
- 2. Degausser
- 3. DC Power Supply
- 4. Digital multimeter

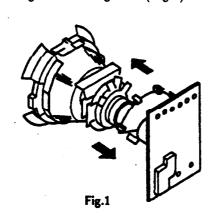
Preparation:

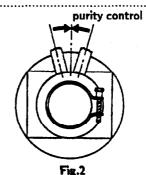
otherwise noted:

- Feed in the white pattern signal.
- Before starting, degauss the entire screen.

3-1. BEAM LANDING

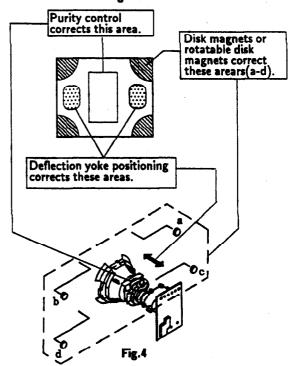
- 1. Input a raster signal with the pattern generator.
- Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Fig.2
- 3. Turn the raster signal of the pattern generator to green.
- 4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are at the sides evenly. (Fig.3)
- 5. Move the deflection yoke forward, and adjust so that the entire screen becomes green. (Fig.1)
- 6. Switch over the raster signal to red and blue and confirm the condition.
- When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
- 8. When landing at the corner is not right, adjust by using the disk magnets. (Fig.4)





Blue Red

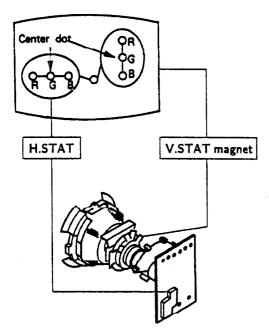
Fig.3



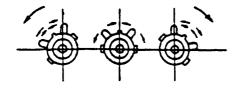
3-2. CONVERGENCE

Preparation:

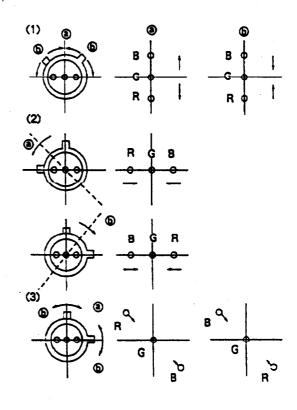
- Before starting, perform FOCUS, H.SIZE, V.LIN and V.SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in dot pattern.
- (1) Horizontal and Vertical Static Convergence



- 1. Adjust H.STAT VR to converge red, green and blue dots the in center of the screen. (Horizontal movement)
- 2. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement)
- 3. If the red, green and blue dots do not converge on the center of screen with H.STAT VR, perform horizon-tal convergence adjustment using H.STAT VR and V.STAT magnet as shown below. (In this case, H.STAT VR and V.STAT magnet effect each other.)
- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



4. When the V.STAT magnet is moved in the direction of arrow @ and D, red, green and blue dots move as shown below.

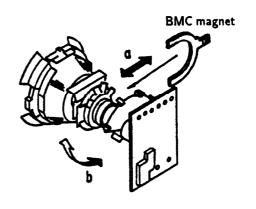


If the blue dot does not converge with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H.static convergence.

Rotate BMC magnet (b) to correct insufficient V.static convergence.

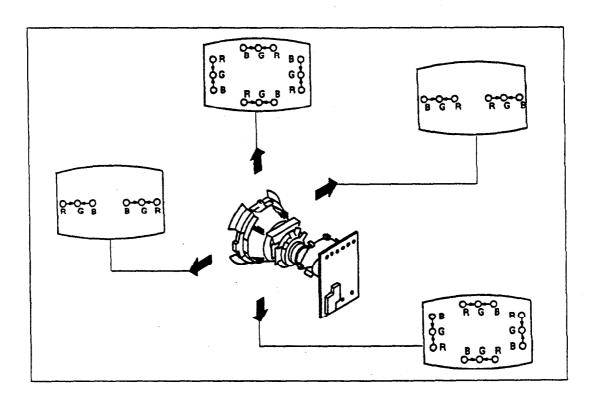
In either case, repeat Beam Landing Adjustment.

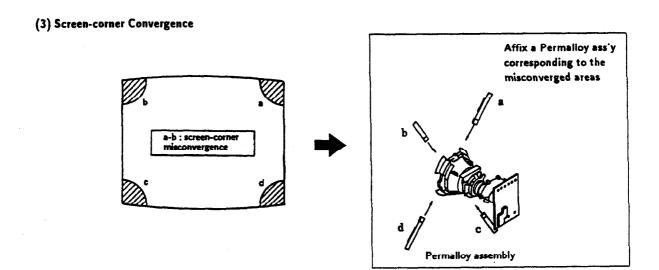


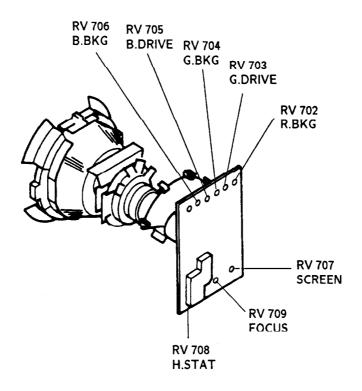
(2) Dynamic Convergence Adjustment Preparation:

- Before starting perform Horizontal and Vertical static convergence Adjustment.
- 1. Slightly loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.

- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.







3-3. FOCUS

Adjust FOCUS control for best picture.

3-4. SCREEN(G 2) and WHITE BALANCE [SCREEN(G2)]

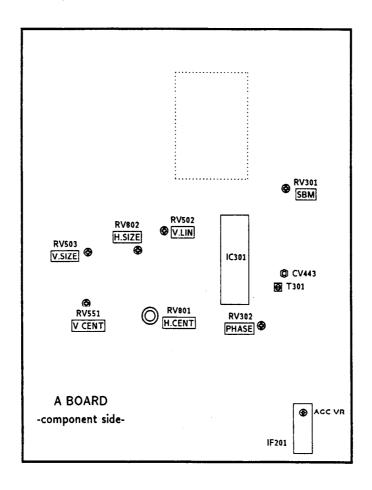
- 1. Input a dots pattarn.
- 2. Set the PIC, BRT controls at minimum and COLOR control at 50%.
- 3. Confirm the BKG voltage is less than 160 Vdc when turning RV 706 (B.BKG), RV 704 (G.BKG) and RV 702 (R.BKG).
- 4. Note the color when becomes visible first when turning RV707 (SCREEN).

[WHITE BALANCE(Cut off)]

- 1. Input a all white signl.
- 2. Set the PIC control to minimum and set the BRT control at normal.
- 3. Turn RV 703 (G.DRIVE) and RV 705 (B.DRIVE) fully clockwise.
- 4. Adjust BKG controls for best white balance.
- 5. Set the PICTURE control to maximum. Observe the screen and adjust the DRIVE controls for best white balance.
- 6. Repeat steps 4 and 5.

SECTION 4 CIRCUIT ADJUSTMENT

4-1. A BOARD ADJUSTMENTS



RF AGC ADJUSTMENT (IF201)

- 1. Receive a strong off-air signals.
- 2. Adjust RF AGC VR control so that snow noise and cross-modulation just disappear from the picture.

A · P · C ADJUSTMENT (CV443) (PAL)

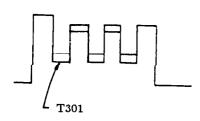
- Short circuit between pin and pin of IC301 with jumper.
- 2. Input the PAL color-bar signal.
- 3. Set the PIC, COL, and BRT controls to normal.
- 4. Adjust CV443 for suitable color intensity.
- 5. Remove a jumper.

ANTI PAL, LINE CRAWLING ADJUSTMENT (RV301,RV302,T301)

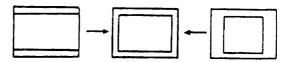
- ANTI PAL ADJUSTMENT
- 1. Input the PAL color-bar signal.
- 2. Set the PIC, COL and BRT controls to normal.
- 3. Connect the oscilloscope to pin 3 of A-1 connector.
- 4. Adjust RV301 (DELAY) and RV302(PHASE) to obtain the waveform as shown below.
- LINE CRAWLING ADJUSTMENT



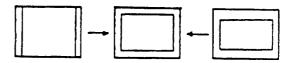
- 1. Input the PAL color-bar signal.
- 2. Set the PIC, COL and BRT controls to normal.
- 3. Connect the oscilloscope to pin 3 of A-1 connector.
- 4. Adjust T301 for minimum line crawling.



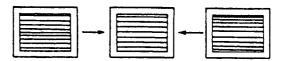
RV802 H.SIZE (HORIZONTAL SIZE)



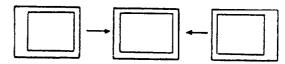
RV503 V.SIZE (VERTICAL SIZE)



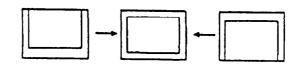
RV502 V.LIN (VERTICAL LINEARITY)



RV801 H.CENT (HORIZONTAL CENTER)



RV551 V.CENT (VERTICAL CENTER)



RV802 H.SIZE (HORIZONTAL SIZE) RV503 V.SIZE (VERTICAL SIZE) **RV502 V.LIN (VERTICAL LINEARITY) RV801 H.CENT (HORIZONTAL CENTER)** RV551 V.CENT (VERTICAL CENTER) **RV552 PIN PHASE (PINCUSHION PHASE)** RV803 PIN AMP (PINCUSHION AMPLIFIER)

pin 🛈

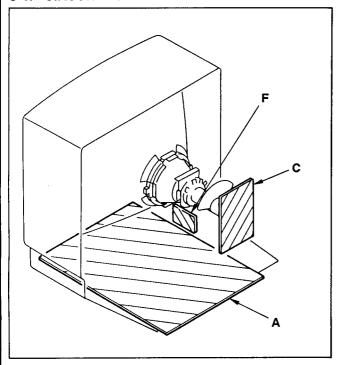
shown

IC

(1)

1 2 3 4 5 6 7 8

5-1. CIRCUIT BOARDS LOCATION



5-2. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

В

C

D

Ε

G

- All capacitors are in μF unless otherwise noted. pF: μμF
 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
- $k\Omega$ =1000 Ω , $M\Omega$ =1000 $k\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm Rating electrical power 1/4 W

- male : nonflammable resistor.
- ullet : internal component.
- panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- rhr : earth-chassis.

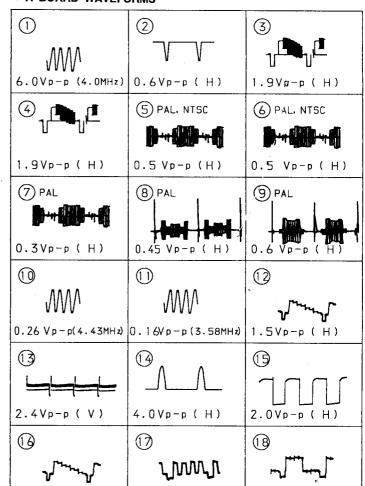
Reference information

: PP

METAL FILM RESISTOR : RN SOLID ; RC : FPRD NONFLAMMABLE CARBON NONFLAMMABLE FUSIBLE : FUSE : RS NONFLAMMABLE METAL OXIDE : RB NONFLAMMABLE CEMENT : RW NONFLAMMABLE WIREWOUND : ※ ADJUSTMENT RESISTOR COIL : LF-8L MICRO INDUCTOR CAPACITOR : TA **TANTALUM** STYROL : PS

POLYPROPYLENE MYLAR

• A BOARD WAVEFORMS



Note:

E

F

G

Н

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
 - $k\Omega = 1000\Omega$, $M\Omega = 1000k\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm

Rating electrical power 1/4 W

- : nonflammable resistor.
- \triangle : internal component.
 - : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ; earth-chassis.

Note: The components identified by shading and mark number specified.

Reference information

RESISTOR : RN METAL FILM

> : RC **SOLID**

NONFLAMMABLE CARBON : FPRD

: FUSE NONFLAMMARI F FUSIBLE

: RS NONFLAMMABLE METAL OXIDE

: RB NONFLAMMABLE CEMENT

: RW NONFLAMMABLE WIREWOUND

ADJUSTMENT RESISTOR : 💥

MICRO INDUCTOR COIL

: LF-8L

CAPACITOR : TA **TANTALUM** STYROL

: PS

: PP **POLYPROPYLENE**

: PT MYLAR

METALIZED POLYESTER : MPS

: MPP METALIZED POLYPROPYLENE

: ALB **BIPOLAR**

HIGH TEMPERATURE : ALT

HIGH RIPPLE : ALR

· Readings are taken with a color-bar signal input.

no mark: with PAL color-bar signal received.

); with SECAM color-bar signal received.

): with NTSC3.58 color-bar signal received. Readings are taken with a $10M\Omega$ digital multimeter.

- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production
- All voltages are in V.
- Circled numbers are waveform references.
- = : B+ bus.

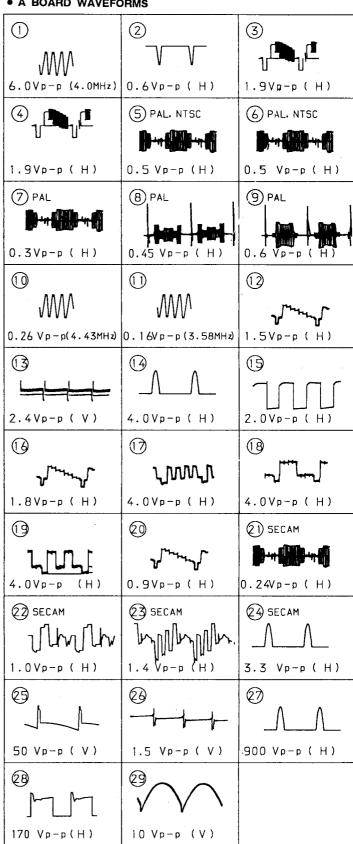
M

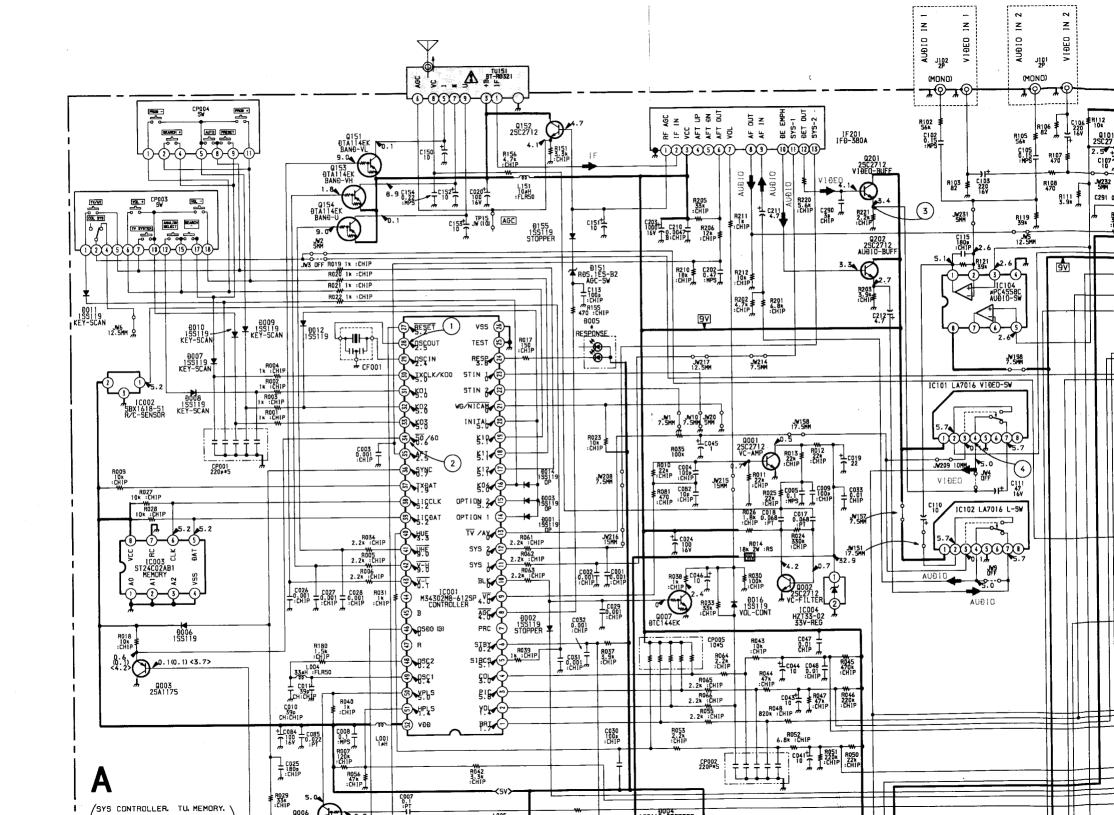
N

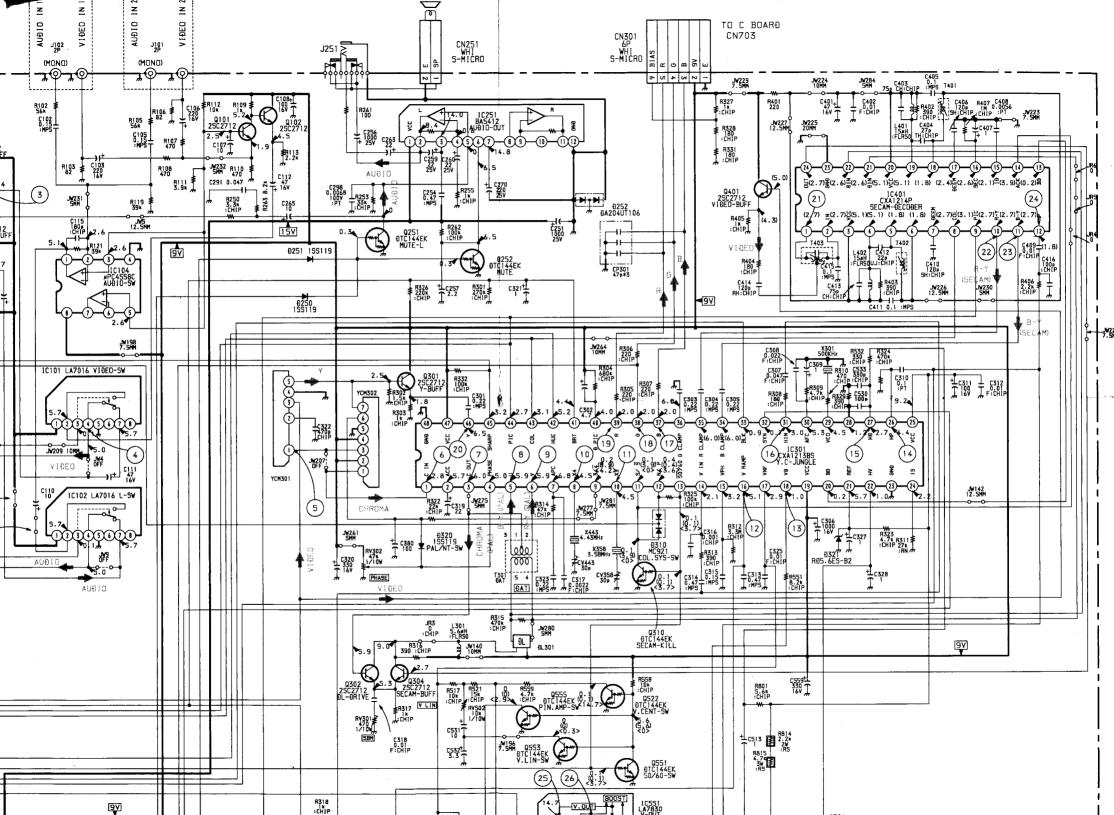
0

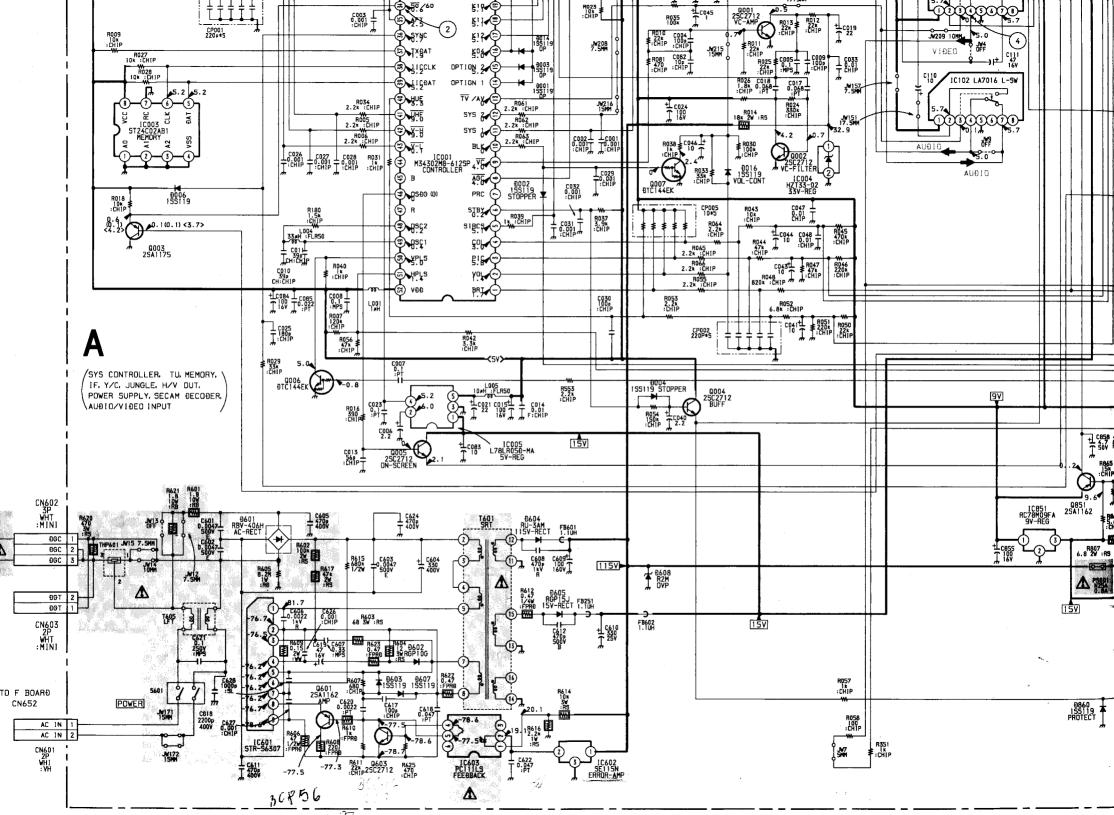
: signal path. (RF)

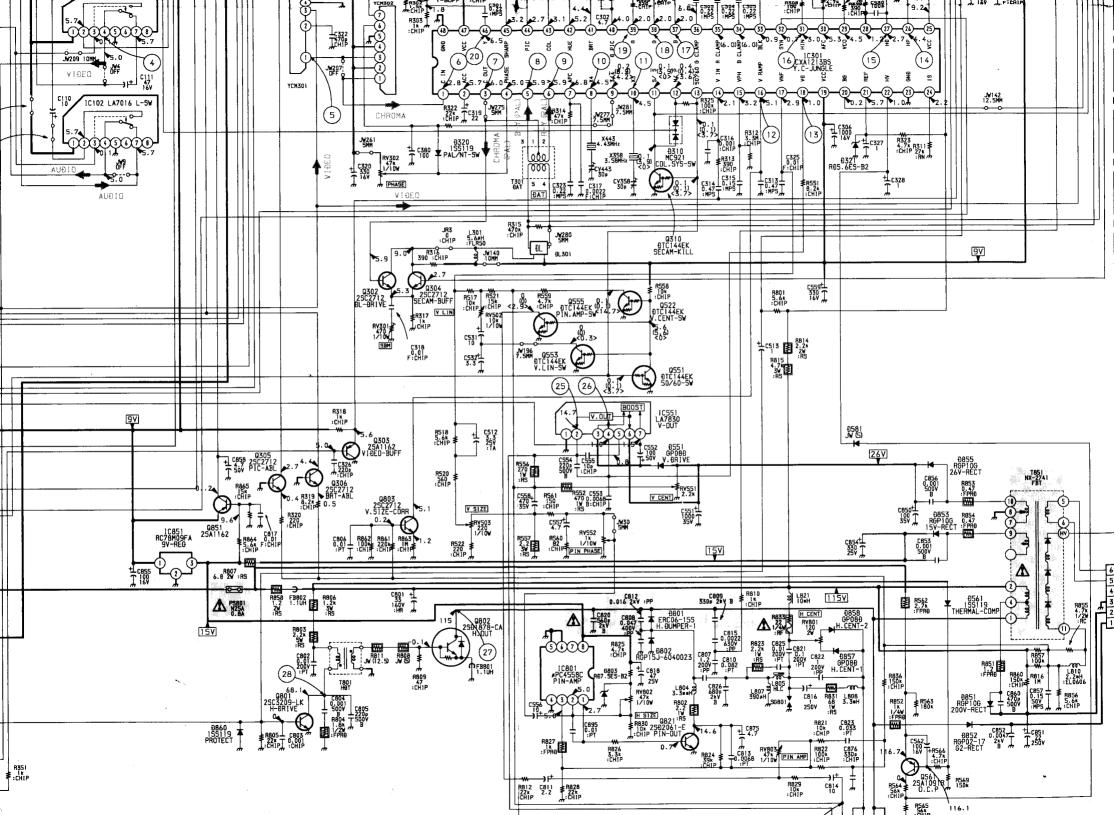
• A BOARD WAVEFORMS







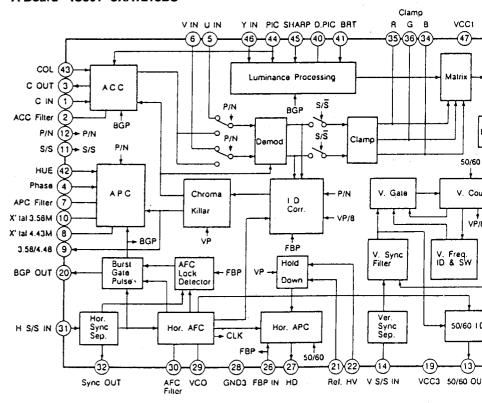




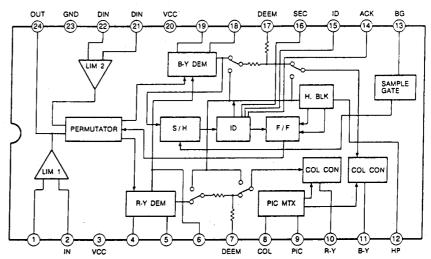
T605

IC		DIODE		VARIABLE RESISTOR	
IC001 IC002 IC003 IC004 IC005 IC101 IC102 IC104 IC251 IC301 IC401 IC551 IC601 IC602 IC603 IC801 IC801	C-8 G-10 D-8 B-7 D-7 B-1 A-2 A-5 C-3 G-6 E-4 F-5	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D014 D016 D151 D155 D250	C-9 C-8 C-9 F-10 D-8 E-10 D-10 E-10 C-10 C-10 C-9 C-7 C-8 A-2 B-9	RV301 RV302 RV502 RV503 RV551 RV552 RV801 RV802 RV803	B-6 B-3 E-5 G-5 G-4 F-4 E-3 E-5 E-5
TRANSISTOR		D251 D252 D310	A - 8 B - 9 B - 5	IF B	LOCK
Q001 Q002	B – 8 B – 3	D320 D321 D551	B – 4 B – 6 G – 4	IF201	B – 2
Q003 Q004	C - 7 B - 9	D561 D601	E – 6 C – 9	TU	NER
Q005 Q006 Q007	D - 7 C - 7 B - 8	D602 D603 D604	G – 7 F – 6 E – 6	TU151	C – 1
Q101 Q102	A – 1	D605	E – 7 G – 6	CRY	STAL
Q151 Q152 Q153 Q154 Q201 Q202 Q251 Q252 Q301 Q302 Q303 Q304 Q305 Q306 Q310 Q401 Q522 Q551 Q553 Q555 Q561 Q601 Q603 Q801 Q802 Q803 Q821 Q851	D101 A - 1 D102 A - 1 D151 C - 3 D152 C - 2 D153 D - 3 D201 B - 1 D202 A - 2 D251 B - 8 D252 B - 8 D301 C - 4 D303 C - 3 D304 B - 6 D303 C - 3 D304 B - 6 D305 C - 4 D310 B - 5 D401 A - 4 D555 E - 5 D551 D - 6 D555 E - 5 D551 D - 6 D601 G - 6 D601 G - 6 D603 G - 6 D801 D - 2 D802 B - 6 D858 D860	E-6 E-16 E-43 F-33 F-33 E-2	X301 X358 X443	C - 5 B - 5 B - 4	

A Board IC301 CXA1213BS



A Board IC401 CXA1214P



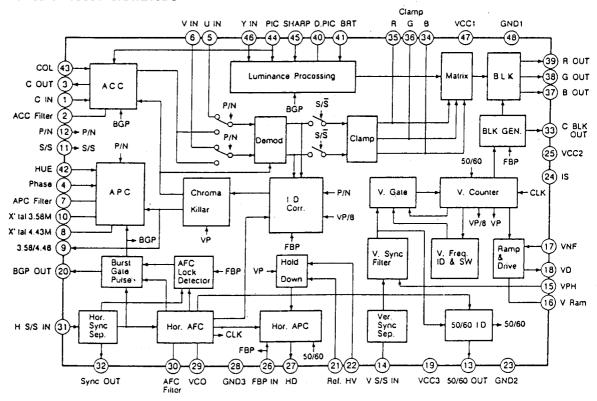


NOTE:

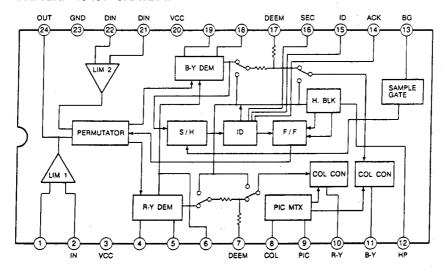
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

VARIABLE ODE RESISTOR C - 9RV301 B-6 C - 8 RV302 B-3 C - 9RV502 E-5 C - 9RV503 G-5 F - 10 RV551 G-4 RV552 F-4 D-8E - 10RV801 E-3 D - 10RV802 E-5 E - 10RV803 E-5 C - 10C - 10C - 9C - 9C-7DELAY LINE C - 8A-2DL301 B-4 B-9A - 8B - 9IF BLOCK B-5B-4IF201 B-2B-6G – 4 E - 6 TUNER C - 9G-7TU151 C-1 F-6 E-6E-7**CRYSTAL** G-6E-6X301 C-5E-1X358 B-5D - 6 X443 B-4E-4G - 3F - 3G - 3G - 3E - 3E - 3D-2

A Board IC301 CXA1213BS



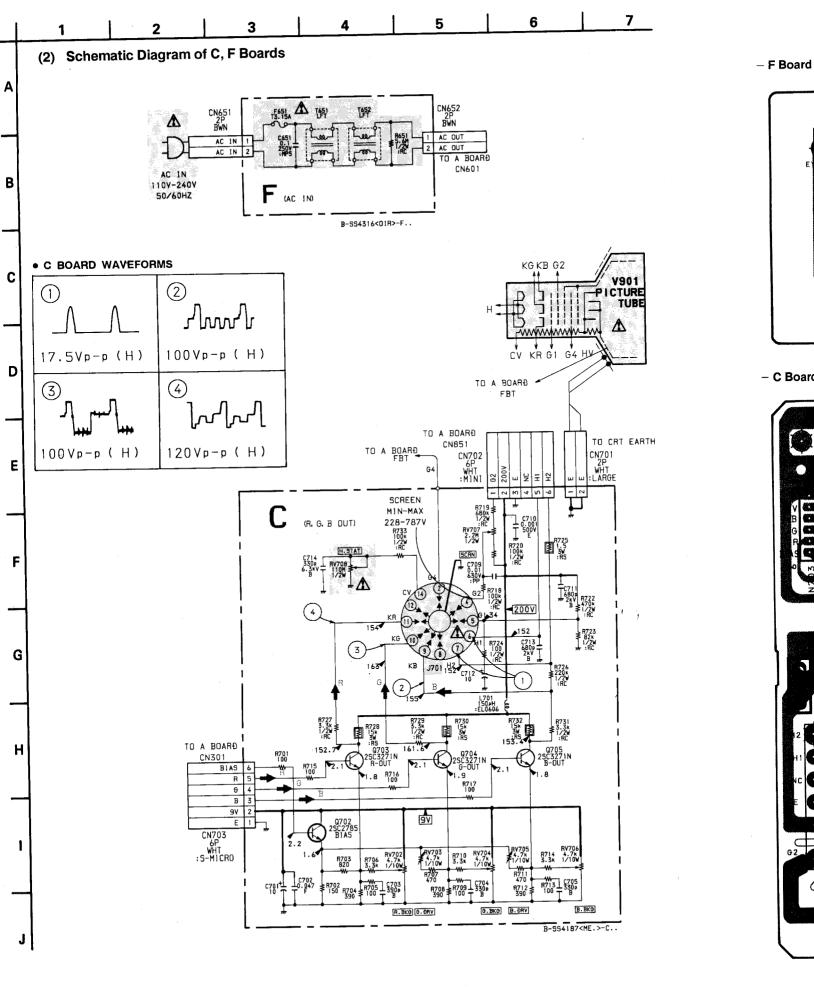
A Board IC401 CXA1214P



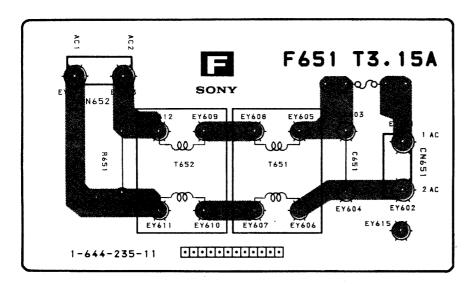


NOTE:

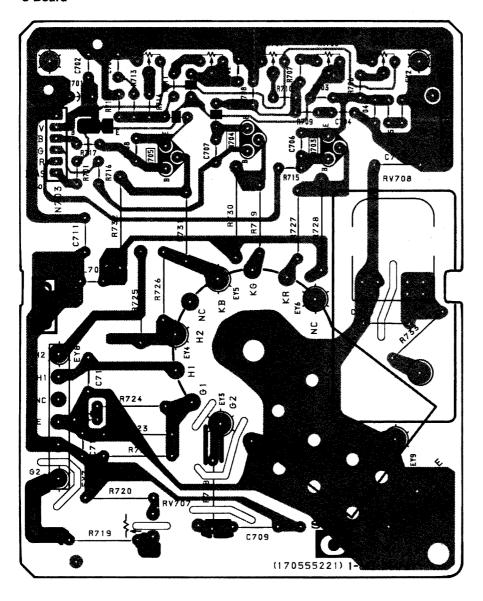
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



- F Board -



- C Board -

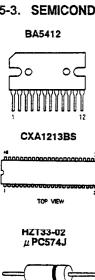


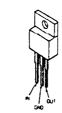


NOTE:

The circuit indicated 600 Vp-p. Care must inspection or repairing

5-3. SEMICONDUCTORS







NJM78M09FA

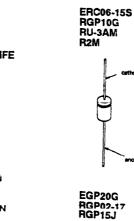
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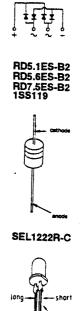


2SC3271-N

2SA1091-0 2S1091R



DA204U

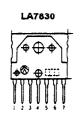


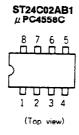
onode

cathode

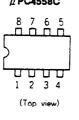
RBV-406H-01

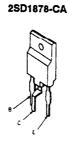
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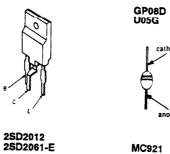


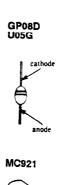


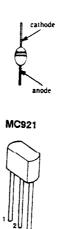
PC111LS

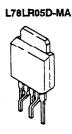
















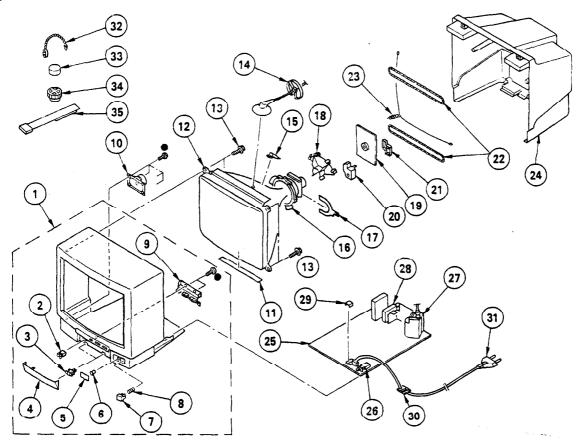
SECTION 6 EXPLODED VIEW

NOTE:

- . Items with no part number and no des-
- cription are not stocked because they are seldom required for routine service. The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are soldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark A are criti-Replace only with part number specified.

●: BVTP3 × 12 7-685-648-79



REF.NO. PART NO.	DESCRIPTION	REMARK	REF.NO. PART NO.	DESCRIPTION	REMARK
1 X-4030-497- 2 4-392-036-6 3 4-032-761-4 4 4-036-584-6 5 4-036-581-6 8 4-036-681-6 8 4-036-682-6 10 1-544-621-6 11 4-372-556-6 12 A-8-735-556-6 13 4-365-808-6 14 *3-704-372-6 15 3-704-495-6 16 A-1-451-249-6 17 1-452-277-6 18 *4-385-422-6	CATCHER, PUSH SHAFT (S), DUOR DOOR CONTROL WINDOW, ORNAMENTAL GUIDE, LIGHT BUTTON, POWER SPRING, COMPRESSION BUTTON, MULTI SPEAKER (9X5UM) SHEET, BLOTTING PICTURE TUBE (A34JBUIOX) SCREW (5), TAPPING HOLDER, HY CABLE SPACER, DY DEFLECTION YOKE (¥14NDA2) MAGNET, BMC	ing a thin	20 *4-374-912-01 21 *4-374-913-01 22 *** *** *** *** *** *** *** *** ***	A A BOARD, COMPLETE TRANSPONNER ASSY, FC: THANSPONNER ASSY, FC: TUNER, ET (BT-RG321) COVER, LED HOLDER HOLDER, AC CORD CORD, POWER (WITH CORD) COLP, LEAD WIRE MAGNET, DISK: 10MM & MAGNET, ROTATABLE DIS	GR) YBACK (NX-2820A1) NNECTORY SK: 15MM ø